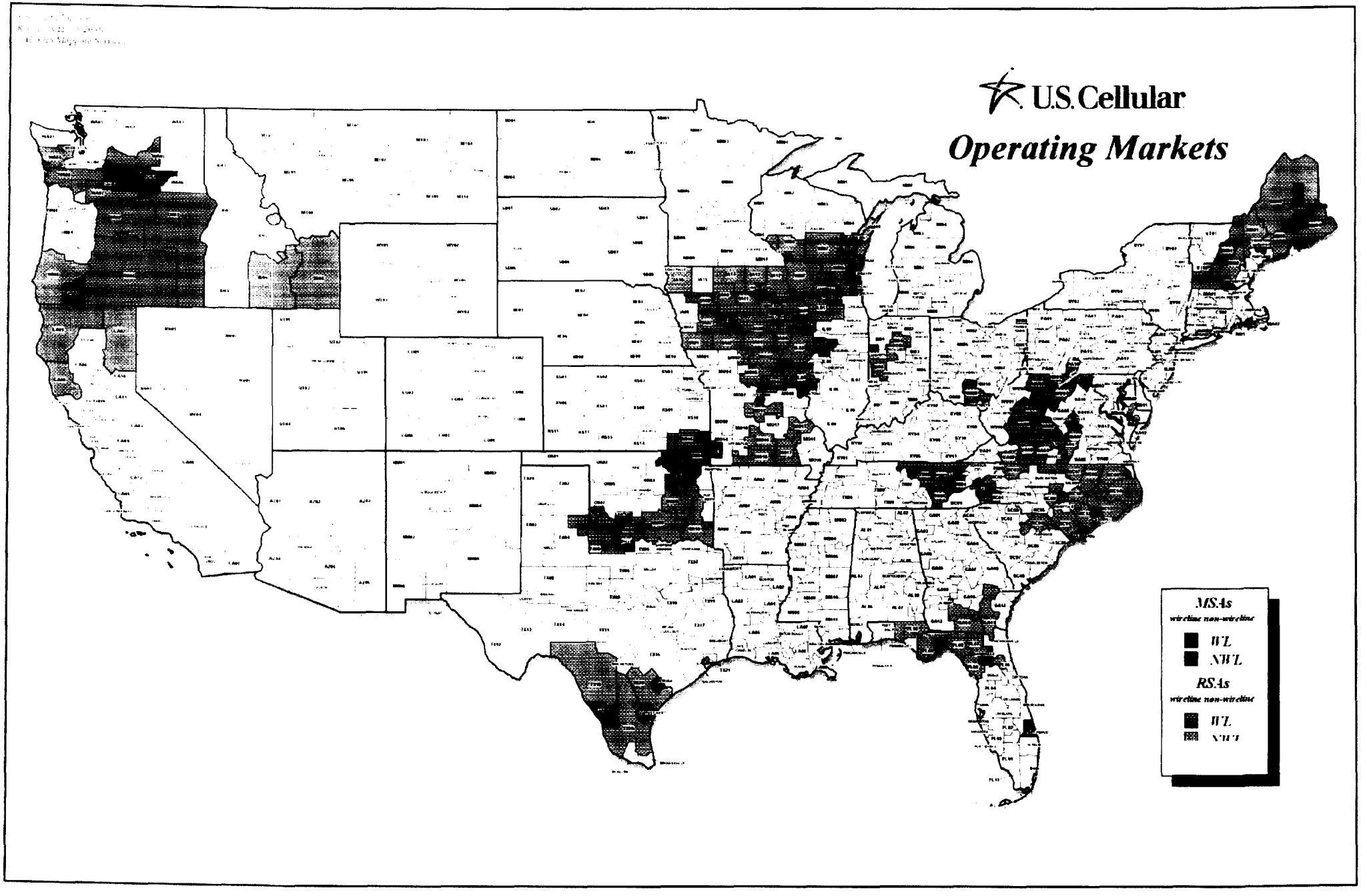
U.S.Cellular
Operating Markets
MSAs
wireline non-wireline
WL
NWL
RSAs
wireline non-wireline
WL
NWL

B

US Cellular
Live PSAPs Report
August 2001

State	County	Market in Production	PSAP Name
FL	Alachua	06/13/01	Alachua County Sheriff's Office
FL	Alachua	06/13/01	Gainesville Police Department-routed to Alachua Cnty S. O.
FL	Martin	04/25/01	Martin County Sheriff's Department
FL	Martin	04/25/01	Stuart Police Department
FL	St. Lucie	05/15/01	St Lucie County 911
IA	Appanoose	07/09/01	Appanoose County Sheriff's Office
IA	Benton	07/09/01	Benton County Sheriff's Department
IA	Black Hawk	08/21/01	Black Hawk County Sheriff's Office
IA	Boone	06/13/01	Boone County Sheriff's Department
IA	Bremer	07/12/01	Bremer County-Waverly Law Center
IA	Buchanan	08/22/01	Buchanan-Independence Public Safety Center
IA	Butler	07/12/01	Butler County Sheriff's Office
IA	Cass	07/02/01	Cass County Public Safety Communications Center
IA	Cedar	06/26/01	Cedar County Sheriff's Department
IA	Cerro Gordo	08/31/01	Cerro Gordo County Sheriff's Office
IA	Cerro Gordo	08/31/01	Clear Lake Police Department
IA	Cerro Gordo	08/31/01	Mason City Police Department
IA	Cherokee	07/12/01	Cherokee County Sheriff's Office
IA	Clinton	07/03/01	Clinton County Sheriff's Department
IA	Dallas	06/13/01	Dallas County Sheriff's Department
IA	Dallas	06/13/01	Perry Police Department
IA	Davis	07/10/01	Davis County Sheriff's Office
IA	Delaware	07/30/01	Manchester Police Department
IA	Des Moines	07/10/01	Burlington Police Department
IA	Fremont	08/15/01	Fremont County Sheriff's Department
IA	Hamilton	07/12/01	City of Webster Police Department
IA	Hardin	07/12/01	Hardin County Sheriff's Department
IA	Hardin	07/12/01	Iowa Falls Police Department
IA	Henry	07/26/01	Henry County Sheriff's Office
IA	Howard	07/13/01	Howard County Sheriff's Department
IA	Jackson	07/15/01	Maquoketa Police Department
IA	Jasper	07/06/01	Jasper County Sheriff's Office
IA	Jefferson	07/31/01	Jefferson County Law Center
IA	Johnson	08/16/01	Johnson County Sheriff's Department
IA	Jones	06/26/01	Jones County Sheriff's Department
IA	Jones	06/26/01	Monticello Police Department
IA	Keokuk	08/31/01	Keokuk County Sheriff's Department
IA	Lee	07/03/01	Keokuk Police Department
IA	Linn	08/16/01	Linn County Sheriff's Department
IA	Louisa	07/11/01	Louisa County Sheriff's Department
IA	Madison	06/13/01	Madison County Sheriff's Department
IA	Mahaska	08/15/01	Mahaska County E911 Center
IA	Marshall	08/15/01	Marshalltown Police Department
IA	Mills	07/12/01	Mills County Communications Center
IA	Monroe	08/30/01	Monroe County Sheriff's Department
IA	Montgomery	07/12/01	Montgomery County Sheriff's Department
IA	Page	07/12/01	Clarinda Police Department
IA	Plymouth	07/12/01	Plymouth County Sheriff's Office
IA	Polk	06/12/01	Ankeny Police Department
IA	Polk	06/12/01	Clive Police Department--routed to Westcom
IA	Polk	06/12/01	Des Moines Police Department
IA	Polk	06/12/01	Polk County Sheriff's Office
IA	Polk	06/12/01	Urbandale Police Department-routed to Westcom
IA	Polk	06/12/01	Westcom
IA	Poweshiek	08/15/01	Poweshiek County Sheriff's Department
IA	Scott	08/22/01	Davenport Police Department
IA	Sioux	07/12/01	Sioux County Sheriff's Department
IA	Story	06/13/01	Ames Police Department
IA	Story	06/13/01	Story County Sheriff's Office
IA	Tama	07/09/01	Tama County Sheriff's Department

US Cellular
Live PSAPs Report
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IA	Van Buren	07/12/01	Van Buren County Sheriff's Department
IA	Wapello	08/31/01	Wapello County Sheriff's Office
IA	Warren	06/13/01	Warren County Sheriff's Office
IA	Washington	08/31/01	Washington County Sheriff's Office
IA	Webster	07/12/01	Webster County Law Enforcement Center
IA	Winneshiek	07/25/01	Decorah Police Department
IL	Carroll	06/28/01	Carroll County 911
IL	Carroll	06/28/01	Savannah Fire Department
IL	Knox	07/25/01	Galesburg Police Department
NC	Beaufort	11/15/00	Beaufort Communication Center
NC	Beaufort	11/15/00	Washington Police Department
NC	Bladen	08/09/01	Bladen County Sheriff's Communications
NC	Brunswick	04/11/00	Brunswick County Emergency Communications
NC	Brunswick	04/11/00	Long Beach Police Department
NC	Brunswick	04/11/00	Oak Island Department of Public Safety
NC	Brunswick	04/11/00	South Port Police Department
NC	Buncombe	12/11/00	Buncombe County Emergency Management
NC	Carteret	01/11/01	Atlantic Beach Police Communications
NC	Carteret	01/11/01	Carteret County Sheriff's Department
NC	Carteret	01/11/01	Emerald Isle Police Communications
NC	Carteret	01/11/01	Morehead City Police Communications
NC	Chowan	11/15/00	Chowan County Central Communications
NC	Columbus	12/01/00	Columbus County Emergency Services
NC	Columbus	12/01/00	Columbus County Sheriff's Office
NC	Duplin	04/11/01	Duplin County Sheriff's Department
NC	Franklin	11/21/00	Franklin County Communications
NC	Halifax	02/15/01	Halifax County Central Communications
NC	Harnett	01/24/01	Dunn Police Department
NC	Harnett	01/24/01	Erwin Police Department
NC	Harnett	01/24/01	Harnett County Sheriff's Communications
NC	Hoke	12/13/00	Hoke County Emergency Communications
NC	Hyde	01/30/01	Hyde County Courthouse
NC	Johnston	11/21/00	Johnston County Emergency Communications
NC	Lee	01/08/01	Lee Couny 911
NC	Lenoir	07/09/01	Lenoir County Communications
NC	Martin	12/05/00	Martin County Communications Center
NC	Nash	12/01/00	Nash County Central Communications
NC	Nash	12/01/00	Rocky Mount Police Communications
NC	Onslow	12/20/00	Camp Lajeune Fire Protection Division
NC	Onslow	12/20/00	Jacksonville Police Communications
NC	Onslow	12/20/00	Onslow County E 911 Communications
NC	Pamlico	08/27/01	Pamlico County Sheriff's Department
NC	Polk	05/25/01	Polk County Communications
NC	Robeson	02/15/01	Randolph County Emergency Management
NC	Rockingham	08/25/00	Eden Police Communications
NC	Rockingham	08/25/00	Reidsville Police Communications
NC	Rockingham	08/25/00	Rockingham County E 911
NC	Sampson	08/14/01	Sampson County Sheriff's Communications
NC	Wayne	01/31/01	Goldsboro Police Department
NC	Wayne	01/31/01	Mt Olive Police Department
NC	Wayne	01/31/01	Seymour Johnson AFB Fire Department
NC	Wayne	01/31/01	Wayne County Communications
NC	Wilson	12/01/00	Wilson County Emergency Communications
SC	Darlington	11/03/00	Darlington County Sheriff's Department
SC	Dillon	11/03/00	Dillon County
SC	Kershaw	11/01/00	Kershaw County 911
SC	Marlboro	11/08/00	Marlboro County E911
TN	Anderson	01/25/01	Anderson County E911
TN	Anderson	01/25/01	Anderson County EMS
TN	Anderson	01/25/01	Clinton Police Department
TN	Anderson	01/25/01	Lake City Police Department

US Cellular
Live PSAPs Report
August 2001

TN	Anderson	01/25/01	Oak Ridge Police Department
TN	Anderson	01/25/01	Oliver Springs Police Department
TN	Blount	01/26/01	Blount County Communications Center
TN	Bradley	02/23/01	Bradley County Communications Center
TN	Bradley	02/23/01	Cleveland Police Department Dispatch Center
TN	Claiborne	02/28/01	Claiborne County Communications Office
TN	Cocke	01/18/01	Cocke County 911
TN	Jefferson	04/11/01	Jefferson County 911
TN	Knox	01/08/01	Knox Emergency Communications District
TN	Loudon	01/26/01	Loudon County Sheriff's Office
TN	McMinn	02/23/01	Ettowah Police Department
TN	McMinn	02/23/01	McMinn County 911
TN	Monroe	01/25/01	Monroe County Communications
TN	Morgan	03/09/01	Morgan County EMS
TN	Rhea	03/05/01	Rhea County 911
TN	Roane	02/23/01	Roane County 911
TN	Sevier	02/09/01	Gatlinburg Police Department
TN	Sevier	02/09/01	Pigeon Forge Police Department
TN	Sevier	02/09/01	Sevier County Sheriff's Office
TN	Sevier	02/09/01	Sevierville Police Department
TN	Trousdale	03/05/01	Trousdale County 911
TN	Union	02/09/01	Union County Sheriff's Office
TX	Aransas - CBCOG	08/31/00	Aransas County Sheriff's Department
TX	Aransas - CBCOG	08/31/00	Rockport Police Department
TX	Archer - NRPC	08/28/00	Archer County Sheriff's Department
TX	Atascosa - AACOG	09/01/00	Atascosa Sheriff's Department
TX	Bandera - AACOG	08/31/00	Bandera County Sheriff's Office
TX	Baylor - NRPC	08/28/00	Baylor County Sheriff's Department
TX	Bee - CBCOG	08/31/00	Bee County Sheriff's Department
TX	Bee - CBCOG	08/31/00	Beeville Police Department
TX	Brooks - CBCOG	08/15/00	Brooks County Sheriff's Department
TX	Childress - PRPC	09/14/00	Childress City Police Department
TX	Clay - NRPC	08/28/00	Clay County Sheriff's Department
TX	De Witt - GCRPC	08/23/00	De Witt County Sheriff's Department
TX	Dimmit - MRGDC	08/31/00	Dimmit County Sheriff's Department
TX	Duval - CBCOG	08/31/00	Duval County Sheriff's Department
TX	Duval - CBCOG	08/31/00	Freer Police Department
TX	Edwards - MRGDC	08/31/00	Edwards County Sheriff's Office
TX	Frio - AACOG	09/01/00	Frio County Sheriff's Department
TX	Goliad - GCRPC	08/23/00	Goliad County Sheriff's Department
TX	Hall - PRPC	09/14/00	Hall County Sheriff's Department
TX	Hardeman - NRPC	08/28/00	Hardeman County Sheriff's Department
TX	Haskell - WCTCOG	08/31/00	Haskell County Sheriff's Department
TX	Jim Hogg - STDC	08/31/00	Jim Hogg County Sheriff's Department
TX	Karnes - AACOG	08/31/00	Karnes County Sheriff's Department
TX	Kinney - MRGDC	08/31/00	Kinney County Sheriff's Office
TX	Knox - WCTCOG	08/28/00	Knox City Hospital
TX	La Salle - MRGDC	08/31/00	La Salle County Sheriff's Department
TX	Live Oak - CBCOG	08/31/00	Live Oak County Sheriff's Department
TX	Maverick - MRGDC	08/31/00	Eagle Pass Police Department
TX	McMullen - CBCOG	08/31/00	Live Oak County Sheriff's Department
TX	Nueces - CBCOG	08/31/00	Corpus Christi Police Department
TX	Nueces - CBCOG	08/31/00	NAS Corpus Christi Security PSAP
TX	Nueces - CBCOG	08/31/00	Nueces County Sheriff's Department
TX	Nueces - CBCOG	08/31/00	Port Aransas Police Department
TX	Nueces - CBCOG	08/31/00	Robstown Police Department
TX	Real - MRGDC	08/31/00	Real County Sheriff's Office
TX	San Patricio - CBCOG	08/31/00	Aransas Pass Police Department
TX	San Patricio - CBCOG	08/31/00	Ingleside NAS
TX	San Patricio - CBCOG	08/31/00	Ingleside Police Department
TX	San Patricio - CBCOG	08/31/00	Mathis Police Department

US Cellular
Live PSAPs Report
August 2001

TX	San Patricio - CBCOG	08/31/00	Portland Police Department
TX	San Patricio - CBCOG	08/31/00	San Patricio County Sheriff's Department
TX	Shackleford - WCTCOG	08/31/00	Shackelford County Sheriff's Department
TX	Starr - STDC	08/31/00	Rio Grande City Police Department
TX	Starr - STDC	08/31/00	Roma Police Department
TX	Starr - STDC	08/31/00	Starr County Sheriff's Department
TX	Stephens - WCTCOG	08/31/00	Breckenridge Police Department
TX	Throckmorton - WCTCOG	08/31/00	Throckmorton County Sheriff's Department
TX	Uvalde - MRGDC	08/31/00	Uvalde City Police Department
TX	Val Verde - MRGDC	08/31/00	Del Rio Police Department
TX	Val Verde - MRGDC	08/31/00	Val Verde Sheriff's Department
TX	Victoria - GCRPC	08/23/00	Victoria Communications Center
TX	Victoria - GCRPC	08/23/00	Victoria County Sheriff's Department
TX	Victoria - GCRPC	08/23/00	Victoria Police Department
TX	Webb - STDC	08/28/00	Laredo Police Department
TX	Webb - STDC	08/28/00	Webb County Sheriff's Department
TX	Wichita - NORTEX	05/15/00	American Medical Response/Lifeline EMS
TX	Wichita - NORTEX	05/15/00	Burkburnett Police Department
TX	Wichita - NORTEX	05/15/00	Electra Police Department
TX	Wichita - NORTEX	05/15/00	Iowa Park Police Department
TX	Wichita - NORTEX	05/15/00	Sheppard Air Force Base Fire Department
TX	Wichita - NORTEX	05/15/00	Wichita Falls Police Department
TX	Willacy - LRGVDC	08/31/00	Raymondville Police Department
TX	Willacy - LRGVDC	08/31/00	Willacy County Sheriff's Office
TX	Wilson - AACOG	09/01/00	Wilson County Sheriff's Department
TX	Young - NRPC	08/31/00	Olney Police Department
TX	Young - NRPC	08/31/00	Young County Sheriff's Department
TX	Zapata - STDC	08/31/00	Zapata County Sheriff's Department
TX	Zavala - MRGDC	08/31/00	Crystal City Police Department
VA	Albemarle	08/02/00	Albemarle Emergency Communication Center
VA	Albemarle	08/02/00	Albemarle Fire Department
VA	Lynchburg City	01/05/01	City of Lynchburg 911
WV	Harrison	07/11/01	Harrison County Emergency Services
WV	Marion	08/13/01	Marion County Central Communications
WV	Monongalia	07/11/01	MECCA 911
WV	Preston	08/01/01	Preston County Emergency Services

C

DECLARATION OF JAMES P. QUINLAN

I, James P. Quinlan, hereby declare under penalty of perjury that the following is true and correct to the best of my knowledge, information and belief:

I am the Director of Technology Development for United States Cellular Corporation ("USCC") and have been employed by the Company since 1991. This Declaration has been prepared to support of USCC's Petition for Waiver of Section 20.18 (g) (the "Petition").

In my capacity as Director of Technology Development, I have been responsible for USCC's efforts to implement a Phase II location solution. I have reviewed USCC's Petition and verify that the facts reported therein detailing USCC's Efforts to Comply with the Phase II E911 Deadline occurred at my direction or under my supervision.

Dated: 9/10/01

D

MEMORANDUM

UNITED STATES CELLULAR
WIRELESS COMMUNICATIONS

From: Phil Romanow

To: Dick Goehring
To: David Friedman

Date: December 11, 1998

Subject: Fonefinder Enhanced Cell Phone With GPS.

Background

On November 13, 1998 a prototype cell phone with GPS receiver was provided to the Corporate Engineering for evaluation as means for the public to be located in an emergency. The phone was tested on the basis of four basic criteria: In-building time to acquire satellites, Outside time to acquire satellites time to acquire, outside accuracy as compared to a Garmin GPS 12 hand held unit, and as a final measure a suburban 911 dispatch center was kind enough allow a test call to be conducted using the Fonefinder Enhanced Cell Phone With GPS herein referred to as the Fonefinder.

The Fonefinder provides Phone number, Latitude, and Longitude as a stored voice (herein referred to as verbal MIN-LAT-LONG) and in terms of DDD-MM.MM (Degrees and Minutes to the hundredths place). The stored voice distress call is activated during an emergency phone call by pressing the third button down on the right side of the phone herein referred to as the test button.

Methodology and Results

1) In-building time to acquire satellites. Fresh out of the box the Fonefinder was tested by turning on the handset and then pressing the test button. It gave "MAY-DAY MAY-DAY" distress call followed by a Massachusetts Latitude and Longitude. Still inside the building, a call was placed to voice-mail and then a message was left. The message left was the verbal MIN-LAT-LONG. An attempt was then made to talk over the verbal MIN-LAT-LONG. Finally the verbal MIN-LAT-LONG was stopped by pressing the test button and a second attempt was made to talk. The call to voice mail was then ended. When the voice message was played back it was discovered the verbal MIN-LAT-LONG could be heard clearly although it was still giving a Massachusetts location it also added in a "Invalid Since Last Fix" message. When the verbal MIN-LAT-LONG is being played this all the that can be heard by the emergency call taker (i.e. the attempt to talk over the verbal MIN-LAT-LONG could not be heard on the voice mail when it was played back). Once the verbal MIN-LAT-LONG was deactivated a two way conversation could again take place.

2) On I-294 headed towards the south suburbs the Fonefinder was plugged in to the cigarette lighter and set on the passengers seat face up. 20 minutes into the drive the Fonefinder was turned on and the test button was then pressed to activate the GPS. A Garmin GPS 12 was then also turned on which itself is accurate to approximately 100 meters. The Fonefinder acquired GPS satellites which it signals to the user by a green light which stays on. The Fonefinder was accurate to within a tenth of a minute both in Latitude and Longitude. This approximately .05 miles in distance. It should be noted that some of the discrepancy may the due to the informal method used (i.e. the tester was driving and by the time the Fonfinder says "May day May day... it has moved to a new position).

3) Fonefinder side by side with a hand held Garmin GPS 12 outside. Both are turned on simultaneously. The Fonefinder could not acquire a new fix within 15 minutes. The hand held Garmin GPS 12 unit got an accurate fix in 1 minute. This test was conducted on a tree lined street in the southwest suburbs of Chicago.

Table Of Further Tests

Environment	Time For Fonefinder to Acquire Satellites	Time for Garmin GPS 12 to Acquire Satellites
Outdoor	Over 10 Minutes	30 Seconds
In vehicle (Plugged In), On Dashboard	2 Minutes	10 Seconds
In vehicle (Plugged In), On Dashboard, Under Trees	7 minutes	10 Seconds
Not Plugged In, On Dashboard	1 minute	10 seconds
On Window Sill, 9th Floor, 8410 Building	25 Minutes	5 Minutes

4) 911 dispatch center allowed a test call. This was done from out in front of the 911 dispatch center. The 911 call taker had a basic understanding of location given as LAT and LONG. The 911 call taker also had the benefit of using state of the art Enhanced 911 computer mapping equipment/software including a map screen which accepts LAT and LONG which can be typed in as Degrees, Minutes, Seconds. The test 911 call was placed, the call taker took the call and listened to the verbal MIN-LAT-LONG repeat itself and the call taker wrote down the information. This test was basically a success with one small glitch, the Fonefinder gave location as Degrees and Minutes to the hundredths place but the 911 center's computers were set up to accept Degrees, Minutes, Seconds and therefore the location could not be pinpointed quickly because the 911 dispatcher would have had to do the conversion by hand. It was concluded therefore that for simplicity's sake if the Fonefinder is ever to be adapted as the national standard for wireless 911 a national standard should be adopted which makes all enhanced 911 centers and all Fonefinder and like devices to communicate LAT - LONG location in the same units. The preferred method for most people in Wireless and in Law Enforcement seems to be Degrees, Minutes, Seconds.

Final Notes

I found the Fonefinder to be a basically convenient method of describing location to a 911 call taker. To become a more dependable in emergencies the Fonefinder will have to acquire GPS in seconds not minutes. Also it should give location in Degrees, Minutes, Seconds. I would purchase one for $150.00. Lastly, it was suggested by the cooperating 911 call taker that the "MAY DAY MAY DAY" message should be changed to "This is an emergency cellular call".

Recommendation

Once Fonefinder makes the improvements recommended above a 6 month trial should be conducted in the Northwest.

ADDENDUM

UNITED STATES CELLULAR
WIRELESS COMMUNICATIONS

From: Phil Romanow

To: Dick Goehring
To: David Friedman

Date: December 11, 1998

Subject: Fonefinder's Impact On Battery Life

Background
A simple test was performed on the Fonefinder to determine how it would impact battery life of the Cell Phone. The cell phone is an Audiovox Analog cell phone operating on the A-Band.

Methodology and Results
1) Discharge with GPS turned on. After having been fully charged on a wall charging unit for 12 hours the phone was turned on with the GPS activated. The phone ran out of power in 4 hours. 2) Discharge with GPS turned off. After having been fully charged on a wall charging unit for 12 hours the phone with the turned on with the GPS off. This time the phone was in standby mode for 12 hours.

Conclusion
With the GPS activated the cell phone's stand bye time is about 1/3 of what it is with the GPS turned off. A fair inference can be made that talk time would be reduced by somewhere in the range of 30% to 40%.

Recommendation
Take no action in regards to GPS's impact on battery life. Since the impact would not be constant but rather only when the Fonefinder's user was reporting an emergency the increased use of battery power should viewed as an equitable trade off for the phone's ability to describe it's position.

MEMORANDUM

UNITED STATES CELLULAR
WIRELESS COMMUNICATIONS

From: Phil Romanow

To: Dick Goehring
To: David Friedman

Date: January 27, 1999

Subject: Retrial of Fonefinder Enhanced Cell Phone With GPS.

Background

On December 28, 1999 a FAX was received from Tendler Cellular stating that the Fonefinder used in the November 13, 1998 Fonefinder Trial, (Reference Memo: December 11, 1998 Fonefinder Enhanced Cell Phone With GPS) had a defect in the GPS shielding. The Fonefinder was repaired and subsequently sent back to USCC in Chicago for retrialing. Briefly, then, here are the results of the retrial conducted on 12/31/98.

Results

Environment	Time For Fonefinder to Acquire Satellites	Time for Garmin GPS 12 to Acquire Satellites
Outdoor On Higgins Rd.	50 Seconds	30 Seconds
Outdoor On Higgins Rd. 2nd Time	15 Seconds	15 Seconds

Conclusion

A properly operating Fonefinder acquired GPS satellites in about the same time one would have expected from a Garmin GPS 12 hand-held unit and provided LAT-LONG position to user with the same accuracy as a Garmin GPS 12 hand-held unit.

Recommendation

In the December 11, 1998 Fonefinder Enhanced Cell Phone With GPS Memo it was stated that in order to become more dependable in emergencies the Fonefinder will have to acquire GPS in seconds not minutes. It has succeeded in passing this requirement.

With regard to the second issue, the assumption that the Fonefinder should give location in Degrees, Minutes, Second (D-M-S) as opposed to its current method of reporting location which is Degrees, Decimal Minutes I believe one of two things will have to happen to make the Fonefinder an acceptable Phase II 911 solution. Either the PSAP's will have to agree to undertake a training program in the field of LAT-LONG Position Finding including unit conversion (i.e. Decimal Minutes To D-M-S) or a national standard will have to be agreed upon by wireless carriers, vendors such as Fonfinder, and law enforcement on the units that location will be provided in. The recommendation therefore is to delay a market trial until this second issue is resolved.

E

REQUEST FOR QUOTE
E911 Phase 2 Network Solution Equipment

April 25, 2001

CONFIRMATION OF RECEIPT

_____We have received U.S. Cellular's Request for Quote (RFQ) for E911 Phase 2 Network Solution Equipment and plan on bidding for the business.

OR

_____We have received U.S. Cellular's Request for Quote (RFQ) for E911 Phase 2 Network Solution Equipment and do not plan on bidding for the business.

_____
Name

_____
Company

CONFIRMATION OF SUBMISSION

Our company has, as planned, submitted our response to U.S. Cellular's Request for Quote (RFQ) for E911 Phase 2 Network Solution Equipment, and as instructed, has sent a copy to your attention via Federal Express, UPS, or other traceable method.

_____
Name

_____
Company

_____
Package Carrier

_____
Date sent

_____
Tracking number

SECTION I: GENERAL INFORMATION

1. Project Background

United States Cellular Corporation and its affiliate, TDS Telecommunications Corporation (collectively referred to as "USC") wish to obtain information and price quotations on E911 Phase 2 Network Solution equipment. It is our intention to purchase the equipment for the cell sites listed in the specifications. Please provide a quotation which meets all of the specifications contained herein.

2. Scope

You are being asked to submit proposals to provide USC with E911 Phase 2 Network Solution equipment which meets the FCC accuracy requirements. This proposal will be used to select the vendor who will supply the equipment. USC may choose not install the equipment. USC also reserves the right to award or deny business based solely on the response to this proposal.

3. Project Events

The following timeline has been established for the RFP process:

Request for Proposal (RFP) issue date:	April 25, 2001
Response to RFP due:	May 11, 2001
Review / Q&A:	May 25, 2001
USC vendor decision:	June 1, 2001

USC reserves the right to change any of the dates set forth in the above timeline.

SECTION II: PROVIDER INSTRUCTION AND INFORMATION

1. *Confidentiality of Information*

Any information provided by USC in relation to this RFQ or disclosed during site visits shall be deemed confidential and proprietary information, and shall not be disclosed without the written approval of USC. USC shall keep all responses to this RFQ in confidence and shall exercise reasonable care to maintain the confidentiality of the contents of the responses to this RFQ, including limiting access to this information only to those employees, contractors, or agents who have a need to know. Nothing in this RFQ shall operate as a waiver or modification of any of Bidder's obligations under a confidentiality or nondisclosure agreement entered into between Bidder and USC. In addition to the foregoing, USC may require Bidders to sign a confidentiality agreement to further protect confidential information that may be disclosed in the bid process.

All information submitted becomes the property of USC. USC shall have no obligation to return any of the information received in relation to this RFQ. You may designate the portions of your response that are proprietary in nature and USC agrees not to disclose those portions except for purposes of evaluating the quote.

2. *Costs Incurred*

USC is not responsible for any costs associated with responding to this RFQ.

3. ***Provider Questions***

Business related questions should be directed to:

US Cellular
Attn: Mr. Paul Gill
8410 West Bryn Mawr Avenue
Suite 700
Chicago, IL 60631-3486
(773)399-4910

Technical related questions should be directed to:

US Cellular
Attn: Mr. Chuck Wood
8410 West Bryn Mawr Avenue
Suite 700
Chicago, IL 60631-3486
(773)399-7090

4. ***Due Date***

Your response is due by the close of business, Friday, May 11, 2001. Meeting the dates specified is a requirement.

5. ***Media for Response***

Please provide one (1) copy of your information on 8 ½ x 11-inch paper, as well as one version in an electronic format. Please use Microsoft Word and/or Microsoft Excel.

6. ***Address for Response***

Diskette, original, and copies to:

US Cellular
Attn: Mr. Paul Gill
8410 West Bryn Mawr Avenue
Suite 700
Chicago, IL 60631-3486

7. ***Financial Statements and Company Profile***

a) Include one copy of your Annual Report.

8. ***References***

Please provide **three (3)** client references using the type of services performed that are similar in nature to the requirements of this RFQ. Also provide a list of your other cellular clients. USC reserves the right to contact any or all customer references.

For each customer reference, please provide the following:

a) Company name
b) Company address
c) Contact name
d) Contact title

e) Contact phone number
f) Contact e-mail address if available

9. ***Bidders Modification and Withdrawal of Proposals***

You may, without prejudice to yourself, modify or withdraw your proposal by written request, provided that the request is received by USC prior to the due date and time at the address to which your proposal was to be submitted. Following withdrawal of your proposal, you may submit a new proposal provided such new proposal is received prior to the due date.

We may modify any provisions or part of the RFQ documents at any time prior to closing time.

10. ***Pricing Conditions***

Proposal validity-period is requested for One Hundred Eighty (180) days after the closing date of this RFQ.

The quoted price(s) shall include all costs for materials, labor, equipment, testing, and any and all items of expense, fees, taxes, duties and overhead.

All pricing information requested in this RFQ shall be provided. Failure to comply with this request may result in a rejection of any proposal. We reserve the right to request and have you furnish any accounting breakdown of all contract prices. This request may be made after contract price has been finalized with the selected vendor.

If you are the selected vendor, you will be responsible for acquiring any and all licenses (applicable contractor's license(s), business license(s), etc.) and permits, excluding licenses, required by the Federal Communications Commission that may be applicable.

Quotes for E911 Phase 2 Network Solution Equipment are being invited from other bidders.

In the case of any discrepancy between words and figures, the words shall prevail. In the case of errors in addition or extension, the unit rates quoted shall prevail.

11. ***Exceptions and Deviations***

No qualifications to any requirement, provision, specification, or stipulation of the RFQ document shall be made by you. Failure to comply with this condition may result in a rejection of any proposal.

If you feel it would be advantageous to us to deviate from the requirements, conditions, and provisions set forth in the RFQ, you may present such departures as an alternative, explaining in full detail the nature and extent of your proposed departure and the consequent impact on the prices, schedules, or any other aspect of your proposal.

Such departures, if any, shall be clearly identified as your alternate proposal and listed in a section of the proposal devoted explicitly to that purpose. Considerations of any alternate proposal will be at our sole discretion.

USC is not responsible for identifying or resolving, during proposal review, any deviations that may be contained in your proposal. If you are awarded the contract, the only deviations recognized will be those mutually agreed upon and written into the contract.

12. ***Discrepancies and Omissions/Addenda***

Should you find discrepancies in or omissions from the RFQ documents, or should their intent or meaning appear unclear or ambiguous, you shall notify the aforementioned contact requesting resolution. Replies to

such notices will be issued simultaneously to all invited bidders. You shall acknowledge receipt of all Addenda in your proposal letter. We will not be bound by, and you shall not rely on, any oral interpretations or clarifications of the RFQ documents.

13. ***Submission of Quote***

The submission of a quote indicates acceptance by you of all conditions contained herein.

SECTION III: SPECIFICATIONS

Description: USC is requesting an Engineering, Furnish and Install (EF&I) quotation for Position Determining Equipment (PDE) using E911 Phase 2 Network Solution Equipment in the Wichita Falls, Texas area. Presently, USC is providing Phase 1 service using XYPOINT. The Phase 2 PDE must interface with XYPOINT using J-STD-036. All equipment must meet the FCC E911 Phase 2 accuracy requirements. USC reserves the right not to deploy any of the responses to this RFQ.

Cell Site Detail Summary

Descriptions of the cell sites are as follows:

Item	Type
Wichita Falls, Texas MSC	Nortel
Technology	AMPS, TDMA
Total Cell Number of Sites	22
Total Sectors (AMPS)	29
Total Sectors (TDMA)	29
Total Sectors (CDMA)	0

Cell site data is enclosed.

Please Provide The Following Information:

Equipment, Maintenance and Training

1. Project milestones from after receipt of order (ARO) to manufacturing, deployment and testing.
2. Block diagram of the installation.
3. Equipment specifications (physical and electrical) and the deployment locations.
4. Equipment location requirements environmental.
5. Equipment location requirements e.g. cell sites, MSC, etc.
6. Communications requirements by device. This includes data rates, protocol, type, and quantity that are required from the cell site to a central controller.
7. Explain in detail by communication type, what sections of J-STD-036 are met or used by each communication circuit where applicable.
8. Explain in detail any additional RF equipment that must be purchased and deployed by USC in order for the location equipment to function.
9. Explain in detail any additional software/firmware that must be purchased and deployed by USC in order for the location equipment to function.
10. Explain in detail the calibration procedures necessary for the location equipment to function.
11. Material and test equipment required to provide proof of performance testing proving conformance with the FCC E911 Phase II requirements.
12. Please identify the equipment added or changed out when the system technology is changed, e.g. TDMA to CDMA.
13. Maintenance requirements.
14. Required calibration intervals.

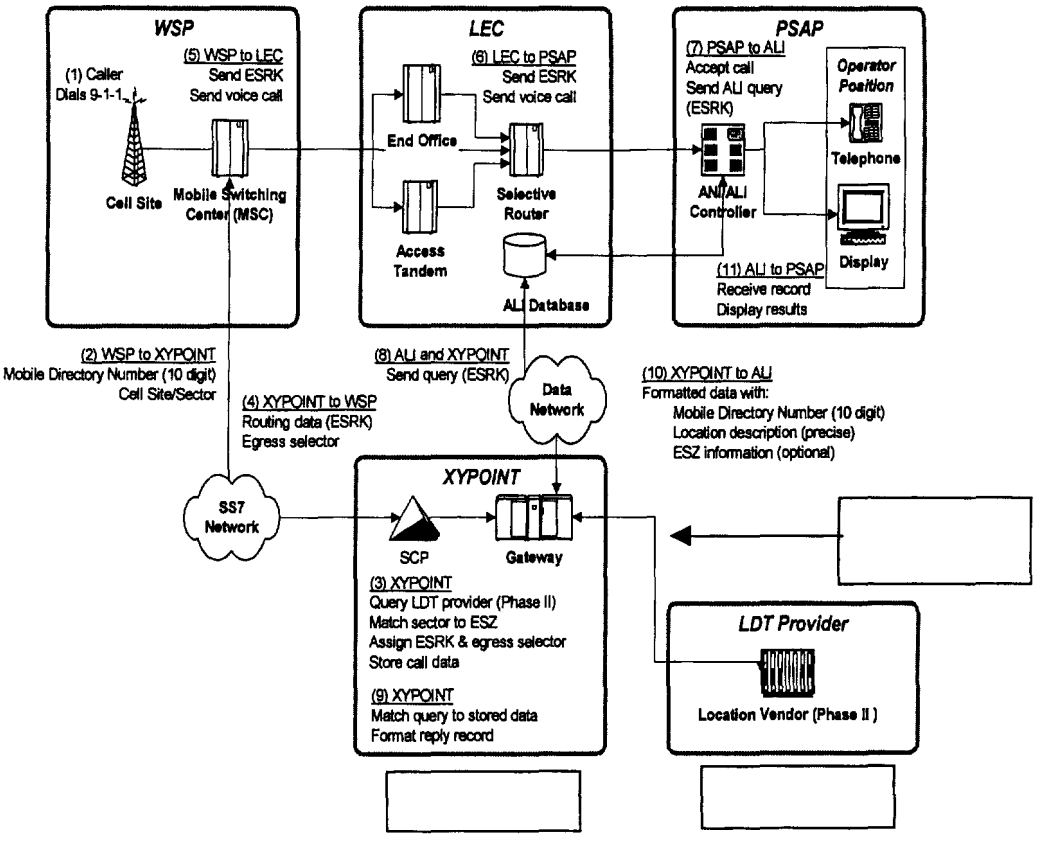
15. Recommended spare parts and recommended spare parts stocking levels.
16. Training requirements and course schedules.

Installation and Labor

1. Pricing for each type of cell site (Omni, sectored, etc) must be specified.
2. Any extra ordinary labor charges must be specified.
3. Labor for testing with the PSAPs must be specified.
4. Labor to provide proof of performance testing proving conformance with the FCC E911 Phase 2 requirements.

Equipment Pricing

1. Equipment pricing must be broken out by location and cell site equipment type.
2. If more than one type of location equipment is required at a location, please breakout pricing by type.
3. Please provide current pricing of equipment added when the system technology is changed, e.g. TDMA to CDMA.
4. Pricing for engineering, documentation, drawings, etc., should be specified.
5. If equipment pricing is bundled with service bureau pricing, please identify each.



Typical Network Diagram

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NORTEL NETWORKS
How the world shares ideas.

July 25, 2001

Mr. Jay Quinlan
8410 West Bryn Mawr
Chicago, Illinois
60631

RE: E911 Phase 2 core wireless network software

Dear Jay,

As requested, this letter is written to provide US Cellular with information about the Nortel Networks E911 core wireless technology plans on the Nortel Networks DMS-MTX platform.

As noted in a letter dated October 24, 2000, Nortel Networks is developing J-STD-036 standards compliant E911 core network software. The Nortel Networks E911 core network software solution for the DMS MTX switch will be included in MTX10. The MTX10 generic software release will become generally available in 4Q 2001. Nortel Networks is not developing the location technology itself.

The Nortel Networks E911 Phase II core wireless technology provides the foundation to support both handset and network based solutions for a TDMA or CDMA carrier. Nortel Networks will not support the TDMA handset standard, SAMPS[1], in MTX10 since no handset vendor has indicated that it will provide SAMPS enabled TDMA handsets. No additional development beyond the MTX10 E911 phase II core wireless software is necessary for either a network or handset solution for CDMA networks or a network based solution for TDMA networks.

In addition to the core network software included in the MTX10 generic software release, a Mobile Positioning Center(s) (MPC) and Position Determining Entity(ies) (PDE), designed in accordance with the J-STD-036, must be integrated into a carrier's network in order to supply location information to a Public Safety Answering Point (PSAP). Nortel Networks plans to provide a combined MPC/PDE in Q2 2002. Since the functionality in the MPC and PDE is standards based, carriers may procure this equipment from other vendors and such equipment should inter-work with Nortel Networks core wireless technology.

If you should have any questions, please feel free to contact Tony Smith 972-685-8779.

Sincerely,

Randy Tornes
Director, Wireless Sales

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[1] Satellite Assisted Mobile Positioning Service

G

Lucent Technologies
Bell Labs Innovations

Michael Iandolo
TDMA/CDMA
Product Management
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August 10, 2001

Lucent Technologies is aware that many carriers have filed extension requests of the E911 Phase II deadlines with the FCC. Accordingly, we are providing you with up-to-date information regarding the availability of our E911 Phase II network compliance features.

While Lucent originally estimated that our E911 network features would be Generally Available (GA) in early September, due to changes in mobile software, limited access to over-the-air test facilities and the availability of Assisted-GPS mobiles, final testing has been delayed. These issues have been resolved and we are now proceeding with the First Office Application (FOA).

The FOA will be conducted using CDMA Software Release 17.1. The new target GA date for the following E911 Phase II compliance features is November 9, 2001:

- **FID 3581.0**: E911 Phase II compliance (j-std-036)
- **FID 3581.1**: CDMA Enhancements for E911 Phase II
- **FID 4403.0**: Flexent Position Determination Equipment (PDE)
- **FID 3581.2**: More CDMA Enhancements for E911 Phase II (This feature helps refine the location of mobiles when a pure GPS fix is not possible.)

Lucent recognizes that E911 Phase II is a vital service for wireless subscribers, enabling quick location identification of a mobile phone user in an emergency. We are committed to providing the appropriate network compliance features in the most expedient manner possible. The new GA date will ensure our solution is well tested, fully integrated with handsets and other components, and standards-compliant before making it available to wireless operators.

Sincerely,

cc: M. Chan

H

Nortel Networks
2221 Lakeside Blvd
Richardson, TX 75082

Tel 972-685-5709
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btiff@nortelnetworks.com

Bruce Tiff
Sr. Manager
Services & Regulatory
Wireless Internet Services

September 5th, 2001

US Cellular
Jay Quinlan
8410 W. Bryn Mawr
Ste. 700
Chicago, Illinois
60631

Dear Jay,

The purpose of this letter is to inform you of Nortel's current plans to provide support for MNLS on the DMS-MTX.

At the present time we have not committed to delivering this feature but continue to evaluate the possibility in the event that TDMA customers will require this to fulfill the FCC E911 Phase 2 mandates. Should our position on MNLS change in the future we'll ensure that US Cellular is notified of our intentions.

For "Network" based E911 solutions Nortel is providing the necessary support in our MTX10 software release. There are no plans to deliver a "Handset" based solution for TDMA markets. This is due primarily to lack of support by handset vendors.

For CDMA markets, Nortel is delivering support for both "Handset" and "Network" based solutions in the MTX10 software release.

Sincerely,

Bruce Tiff

NORTEL NETWORKS

How the world shares ideas.

July 05, 2001

Jay Quinlan
US Cellular
8410 West Bryn Mawr
Chicago, Ill.
60631

Re: TDMA based E911 Phase 2 core network technology and CALEA punch list functionality

Dear Jay:

In this letter, Nortel Networks details its plans for making the E911 Phase 2 core wireless network technology (E911 technology) and the CALEA punch list functionality available.

E911

Nortel Networks is committed to its part in enabling an end-to-end, E911 Phase 2 location information solution. As explained in this letter, Nortel Networks will supply the E911 technology enabling wireless carriers using its DMS-MTX switch, when interworking with other parties and technologies, to convey location information to the Public Safety Answering Point (PSAP).[1] Despite diligent development efforts, the E911 technology will be made generally available after October 1, 2001 as detailed in this letter. [2]

Required Components and Availability Details

The E911 technology for use with the DMS-MTX platform requires a combination of hardware and software which Nortel Networks has designed to operate

[1] The Nortel Networks DMS-MTX switch is generally used by carriers to support TDMA and CDMA wireless protocols. Note that the E911 technology does not support Satellite Assisted Mobile Positioning Systems (SAMPS) based TDMA handset solutions. This handset solution is not supported because Nortel Networks understands that no handset vendor plans market introduction of a SAMPS enabled handset.

[2] By generally available, Nortel Networks means that the product has been adequately tested, any corrections made and offered commercially to all carriers desiring to purchase or license the product or software.

in accordance with the E911 applicable J-STD-036 standard. The functional elements constituting the Nortel Networks E911 technology are switch software, RF Access system software, Mobile Positioning Center (MPC) and Positioning Determining Entity (PDE).

The E911 technology elements will be made generally available by Nortel Networks according to the following schedule.

Component	Role	GA Date
MTX10	Switch software	Q4 2001
NBSS10.1	RF access subsystem	Q4 2001

Nortel Networks will make its combined MPC/PDE generally available in Q2 2002. Because the functions performed by the MPC/PDE are standards based, carriers using the Nortel Networks MTX platform may procure the necessary technology from other vendors and need not wait until Nortel Networks makes its MPC/PDE available to deploy E911. Finally, IOS version 4.0 must be deployed in carriers' networks with equipment from multiple vendors. The IOS software will become generally available in Q1 2002.

This schedule represents Nortel Networks' current plan. This plan could be altered by a number of factors, including unavailability of handsets for testing and resolution of technical issues identified through interoperability testing of the E911 technology with other vendors' technology contributions.

Even after general availability, carriers will need time to deploy the solution across the portions of their networks covered by validated PSAP requests.

MNLS

Nortel Networks is currently evaluating development of Mobile Assisted Network Location System software ("MNLS") for the DMS-MTX switch. Nortel Networks understands that US Cellular desires to use MNLS for US Cellular's TDMA network through a waiver similar to the one sought by AT&T Wireless in its April 4, 2001 waiver request to the FCC E911 requirements.

Nortel Networks has not yet committed to the development of the MNLS feature, however, a final decision regarding MNLS development is expected within a month. The actual availability date will be determined in conjunction with the development decision and should development commence, availability would occur in the mid 2002 timeframe.

As US Cellular is aware, the FCC has not yet approved the AT&T Wireless request. In addition, Nortel Networks feels that MNLS will not meet the FCC accuracy requirements for a network based location solution.

Standards

As noted, the E911 technology is standards based. Applicable standards were only approved and published last year. Generally, 18 to 24 months are needed between standard adoption and development of compatible technology. As you will note from the discussion in the above section entitled "Required Components and Availability Details", Nortel Networks has bested or equaled the usual timelines for delivery of functionality after a standard is published.

Field Trial

Nortel Networks endorses an end-to-end field trial before a more extensive roll-out of the E911 technology takes place. The end-to-end field trial is important because, to address the overall goal of the delivery of location information to a PSAP, the E911 technology must successfully interwork with the E911 components supplied by other vendors as well as technologies supplied by other necessary parties, such as the location technology provider and the Local Exchange Carrier.

The successful conclusion of the trial will provide a validated solution across all necessary technologies and parties. To deploy a solution without an end-to-end field trial could lead to remedying the same issues multiple times in a serial fashion. Nortel Networks does not have the resources to deploy the E911 technology and then correct issues, that may well be identical, simultaneously. Other necessary parties, such as the location solution vendors and Local Exchange Carriers and even wireless carriers, may have similar limitations.

CALEA

Nortel Networks will make six punch list items available in generic software release MTX10. Each item will be individually toggled. As noted above, the MTX10 generic software release will become generally available in Q4 2001, shortly after the initial FCC compliance date of Sept. 30, 2001. Any hardware necessary to achieve compliance with the punch list requirements is available now.

Nortel Networks has moved diligently to develop the CALEA punch list functionality since the standards were adopted for the punch list items in April, 2000. Nortel Networks will begin trialing the CALEA software later this summer with several customers. Nortel Networks plans to test the MTX10 CALEA software with the FBI later this year.

Nortel Networks plans to shortly provide the FCC with its delivery schedule for E911 technology and the CALEA punch list functionality. The FBI will be presented with a copy of the Nortel Networks presentation for purposes of demonstrating when the punch list features will be made available. Your company may want to contact the FBI about CALEA flexible deployment in light of the availability of MTX10 after the Sept. 30 compliance date.

If you should have any questions, please contact Tony Smith, Director, Wireless Regulatory Affairs, Nortel Networks at (972) 685-8779.

Sincerely,

Randy Tornes
Director, Wireless Sales